

AMENDMENTS TO THE SPECIFICATION

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Please insert the following paragraph after paragraph [0014] on page 4 of US Patent Application Publication No. US2005/0154546:

FIG. 2 is flow diagram for a method in accordance to an embodiment of the present invention.

Please amend paragraph after paragraph [0022] on page 6 of US Patent Application Publication No. US2005/0154546 as indicated below:

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The flow within each computational path begins by determining the spatial derivative needed for the computation, as shown in step 201 of FIG. 2. The necessary values must be fetched from the memory subsystem 18 in step 203 and streamed into an FFT unit 20 that performs the FFT on the values in step 205 of FIG. 2. Depending on the size of the problem being solved and the capabilities of the FFT unit 20, this computation can easily require several thousand cycles. While the FFT is being computed by the FFT unit 20, the other necessary data, including the primary fields, incident fields, and coefficients, can all be fetched from memory subsystem 18 or computed, as shown in step 207 of FIG. 2. This entire computational path will be pipelined to hide much of the latency of the FFT operation. As results begin emerging from the FFT unit 20, the results are streamed through a pipelined a complex multiplication unit 22 that solves the multiplication aspects of equation (2) set forth above, as shown in step 209 of FIG. 2. At this point, the spatial derivatives will have been computed in the frequency domain. The next step in each datapath 12, 14, 16 is to convert the frequency domain result back into the time domain by means of an IFFT unit 24 that performs an IFFT, as shown in step 211 of FIG. 2. IFFT unit 24 will also undergo a several thousand-cycle latency. As results begin emerging from the IFFT unit 24, the results are streamed into a Computation Engine (CE) 26. The CE 26, given the necessary data and the spatial derivative, solves equation (1) set forth above, as shown in step 213 of FIG. 2. Once complete, the fields are written back to the memory subsystem 18 by CE 26, as shown in step 215 of FIG. 2.